

Amendments to the claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A vaccine composition for the treatment of asthma ~~or COPD~~, comprising an immunogen that ~~is capable of generating~~ generates an immune response in a vaccinee against self IL-13 and an adjuvant composition comprising a combination of a saponin and a non-toxic derivative of LPS.
2. (currently amended) ~~[[A]]~~The vaccine as claimed in claim 1 wherein the immunogen~~[[is]]~~ generates an immune response against human IL-13.
3. (currently amended) ~~[[A]]~~The vaccine as claimed in claim 2 wherein the immunogen comprises human IL-13 supplemented with foreign T-helper epitopes.
4. (currently amended) ~~[[A]]~~The vaccine as claimed in claim 2 wherein the immunogen ~~that is capable of generating an immune response in a vaccinee against self IL-13~~ is a chimaeric human IL-13 immunogen.
5. (currently amended) ~~[[A]]~~The vaccine as claimed in claim 4, wherein the immunogen comprises a non-human IL-13 backbone, substituted with human IL-13 B cell epitopes.
6. (currently amended) ~~[[A]]~~The vaccine as claimed in claim 4 wherein the chimaeric human IL-13 sequence has a similar conformational shape to native human IL-13 ~~whilst having~~ and sufficient amino acid sequence diversity to enhance its immunogenicity when administered to a human, ~~characterised in that the chimaeric IL-13 immunogen wherein the human chimaeric IL-13~~ has the sequence of human IL-13 (SEQ ID NO. 10) comprising:
 - (a) substitution mutations in at least two of the following alpha helical regions selected from the group of: PSTALRELIEELVNIT, MYCAALESII, KTQRMLSGF ~~[[or]]~~ and AQFVKDLLLHLKKLFRE~~[[,]]~~;

(b) ~~comprises in unmutated form~~ at least six of the following regions of high inter-species conservation selected from the group of: 3PVP, 12ELIEEL, 19NITQ, 28LCN, 32SMVWS, 50SL, 60AI, 64TQ, 87DTKIEVA, 99LL, and 106LF[.,.]; and

(c) optionally comprises a mutation in any of the remaining amino acids, wherein any substitution performed in ~~steps a, b or c~~ at least one of steps a, b, and c is a structurally conservative substitution.

7. (currently amended) ~~[[A]]~~The vaccine as claimed in claim 6, wherein the amino acid sequence of human IL-13 comprises conservative substitutions, ~~or substitutions characteristic of amino acids present at equivalent positions within the IL-13 sequence of a non-human species,~~ present in at least six of the following~~[[13]]~~ positions selected from the group of : 8T, 11R, 18V, 49E, 62K, 66M, 69G, 84H, 97K, 101L, 105K, 109E, and 111R.

8. (currently amended) ~~[[A]]~~The vaccine as claimed in claim 7 comprising at least ~~[[6]]~~six of the following substitutions selected from the group of: 8T to S, 11R to K, 18V to A, 49E to D, 62K to R, 66M to I, 69G to A, 84H to R, 97K to T, 101L to V, 105K to R, 109E to Q, and 111R to T.

Position	Substitution
8	T→S
11	R→K
18	V→A
49	E→D
62	K→R
66	M→I
69	G→A
84	H→R
97	K→T
101	L→V
105	K→R
109	E→Q
111	R→T

9. (currently amended) ~~[[A]]The~~ vaccine as claimed in claim 4, wherein the immunogen comprises an IL-13 element~~[[is]] selected from the following group of:~~
Immunogen 1, Immunogen 11, Immunogen 12, and Immunogen 13.

10. (currently amended) ~~[[A]]The~~ vaccine as claimed in claim 4, wherein the immunogen comprises an IL-13 element selected from the ~~following~~ group of:
Immunogen 2, Immunogen 3, Immunogen 7, Immunogen 8, Immunogen 9, and Immunogen 10.

11. (currently amended) ~~[[A]]The~~ vaccine as claimed in ~~any one of claims 1 to 10~~
claim 1 wherein the saponin is QS21.

12. (currently amended) ~~[[A]]The~~ vaccine as claimed in ~~any one of claims 1 to 10~~
claim 1 wherein the non-toxic derivative of LPS is 3D-MPL.

13. (currently amended) ~~[[A]]The~~ vaccine as claimed in ~~any one of claims 1 to 12~~
claim 1 wherein the adjuvant is a combination of QS21 and 3D-MPL.

14. (currently amended) ~~[[A]]The~~ vaccine as claimed in ~~any one of claims 1 to 13~~
claim 1, further comprising an immunostimulatory oligonucleotide.

15. (currently amended) ~~[[A]]The~~ vaccine as claimed in claim 14, wherein the immunostimulatory oligonucleotide has the sequence TCG TCG TTT TGT CGT TTT GTC GTT ~~(OLIGO 4)~~(SEQ ID NO. 63).

16. (currently amended) ~~[[A]]The~~ vaccine as claimed in claim 1 wherein the vaccine comprises a human IL-13 immunogen comprising an orthologous IL-13 sequence, wherein at least one of the orthologous B-cell epitopes ~~[[are]]~~is substituted for the equivalent human sequences.

17. (currently amended) A method for the manufacture of a vaccine comprising the admixture of an immunogen ~~capable of generating~~that generates an immune response against IL-13, and a saponin and a non-toxic derivative of IL-13.

18. (cancelled)

19. (currently amended) A method of treating an individual susceptible to or suffering from asthma comprising administering to that individual ~~[[a]]the vaccine according to any one of claims 1 to 16~~in claim 1.

20. (new) A vaccine composition for the treatment of COPD, comprising an immunogen that ~~is capable of generating~~generates an immune response in a vaccinee against self IL-13 and an adjuvant composition comprising a combination of a saponin and a non-toxic derivative of LPS.